

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method of magnetic resonance imaging of a sample, said method comprising:
  - i) administering a hyperpolarised MR imaging agent in liquid phase comprising non-zero nuclear spin nuclei into the sample;
  - ii) exposing the sample to a radiation at a frequency selected to excite nuclear spin transitions in said non-zero nuclear spin nuclei;
  - iii) detecting MR signals from the sample and utilising spectral-spatial excitation, in combination with a FISP or PSIF pulse sequence with a flip angle of 45 to 90 degrees, where said MR imaging agent exhibits variations in relaxation time T2 as a result of physiological changes or as a result of metabolism in said sample; and
  - iv) ~~optionally~~ generating an image, physiological data or metabolic data from said detected signals.
2. Cancelled.
3. Cancelled.
4. Cancelled.
5. (Previously presented) The method as claimed in claim 1 wherein said non-zero nuclear spin nuclei are selected from the group consisting of  $^1\text{H}$ ,  $^3\text{He}$ ,  $^3\text{Li}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{19}\text{F}$ ,  $^{29}\text{Si}$ ,  $^{31}\text{P}$  and  $^{129}\text{Xe}$ .
6. (Previously presented) The method as claimed in claim 1 wherein said non-zero nuclear spin nuclei are selected from the group consisting of  $^{13}\text{C}$  and  $^{15}\text{N}$ .
7. (Previously presented) The method as claimed in claim 1 wherein said MR imaging agent is artificially enriched above natural abundance in the MR imaging nucleus.

8. (Original) The method as claimed in claim 6 wherein the MR imaging agent has an effective nuclei  $^{13}\text{C}$  polarisation of more than 1%.

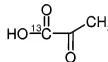
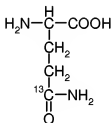
9. (Original) The method as claimed in claim 6 wherein the MR imaging agent is  $^{13}\text{C}$  enriched at carbonyl or quaternary carbon positions.

10. (Original) The method as claimed in claim 9 wherein said  $^{13}\text{C}$  enriched compound is deuterium labelled adjacent said  $^{13}\text{C}$  nucleus.

11. (Previously presented) The method as claimed in claim 6 wherein said  $^{13}\text{C}$  nuclei are surrounded by one or more non-MR active nuclei or entities selected from the group consisting of O, S, C, a double bond, and a triple bond.

12. Cancelled.

13. (Previously presented) The method as claimed in claim 1 wherein said imaging agent comprises a compound selected from pyruvate,



, and

14. (Previously presented) The method as claimed in claim 1 wherein said non-zero nuclear spin nuclei are  $^{13}\text{C}$  nuclei.

15. (Previously presented) The method as claimed in claim 1 wherein the sample is a human or non-human animal body.

16. (Previously presented) The method of claim 15 wherein step iii) is carried out after the agent has left a vascular bed and wherein step iv) metabolic data are generated from said detected signals.